

The above rejection is respectfully traversed and reconsideration thereof is requested. Applicant respectfully submits that there is no teaching, suggestion, or motivation for modifying the cited references in the manner proposed by the Examiner.

The present invention as defined by Claim 1 relates to an electronic operating device for operating one or more gas discharge lamps. The operating device includes an AC voltage generator which feeds an AC voltage into a load circuit which contains at least one lamp and is designed such that the phase of the current which flows in the load circuit is determined with reference to the applied AC voltage, essentially by at least one component which conducts a current which flows through the filaments, and a device for measuring the phase of the current, which flows in the load current, with reference to the applied AC voltage. The operating device is disconnected as soon as the above-named device for measuring the phase detects a phase angle which violates a prescribed limiting value.

Overgoor et al teaches a circuit arrangement for operating a discharge lamp. The circuit arrangement including two NPN switching elements S and S2 driven by a drive circuit III.

Ribarich teaches a monolithic electronic ballast controller IC for driving two MOS gated power semiconductors connected in a totem pole or half-bridge arrangement. The controller provides programmable preheat time and current, programmable end-of-life protection, lamp fault protection and over-temperature protection. With reference to FIG. 3, Ribarich discloses a phase control block 38 which subtracts the zero-crossing of the inductor current from a reference phase to produce an error pulse for regulation. The reference phase for phase control block 38 is set by a voltage produced by an internal current flowing through an external resistor at pin PLAMP which sets the lamp power. Unlike the present invention, Ribarich fails to teach or suggest a device for measuring the phase of the current which flows in the load circuit with reference to the AC voltage from an AC voltage generator which is fed into a load circuit. According to the present invention, the operating device is disconnected as soon as this specifically defined phase measuring device detects a particular phase angle between the current flowing in the load circuit and the applied AC voltage from an AC voltage generator.

Applicant respectfully submits that under 35 U.S.C. § 103, teachings of references can be combined only if there is some suggestion or incentive to do so. There is no teaching, suggestion, or motivation for modifying the cited references by including bits and pieces from Ribarich's monolithic electronic ballast controller IC designed for driving MOS gated power semiconductors into the circuit arrangement of Overgood et al which includes two NPN switching elements. Additionally, even if one were to assume, *arguendo*, that one of ordinary skill in the art would have been led to the combination proposed by the Examiner, one would still not arrive at the instant invention because the resulting combination would not meet all of the limitations recited in independent Claim 1. For example, the proposed combination would not include a device for measuring the phase of the current which flows in the load circuit with reference to the AC voltage from an AC voltage generator which is fed into a load circuit. Also, the combination would not include means for disconnecting an operating device as soon as this specifically defined phase measuring device detects a particular phase angle between the current flowing in the load circuit and the applied AC voltage from an AC voltage generator.

Absent such teaching or suggestion, the invention as defined by independent Claim 1 is deemed fully patentable over the above references. Withdrawal of the rejection under 35 U.S.C. § 103 and allowance of independent Claim 1 is respectfully urged. Dependent Claim 3, dependent on independent Claim 1 and thus on subject matter deemed patentable, is similarly viewed. Allowance thereof is also urged.

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,075,599 to Overgoor et al and U.S. Patent No. 6,008,593 to Ribarich as applied to Claim 1 above, and further in view of U.S. Patent No. 5,181,026 to Granville.

Granville relates to a power transmission line monitoring system. Applicant respectfully submits that nowhere does Granville mention that the power transmission line monitoring system includes "gas discharge lamps" as suggested by the Examiner. With particular attention to FIG. 6, Granville teaches a quartz halogen incandescent lamp 99 within a ground receiving and data processing station 38. Column 3, lines 41-50 cited by the Examiner, relates to measuring the power line voltage sinusoidal waveform using the electric field phasor measured by an electrostatic field meter attached to the power

line and is referenced to earth ground. Clearly, Granville fails to teach or suggest a device for measuring the phase of the current which flows in a load which carries out a time measurement between the instant of the zero crossing of the AC voltage supplied by an AC voltage generator and the instant of the zero crossing of a load circuit current for use in an electronic operating device for a gas discharge lamp as defined by Claim 2.

Claims 4-6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,075,599 to Overgoor et al and U.S. Patent No. 6,008,593 to Ribarich as applied to claim 1 above, and further in view of U.S. Patent No. 5,925,990 to Crouse et al.

Applicant respectfully submits that the Claim 1 arguments above with respect to Overgoor et al and Ribarich apply also to this rejection. Crouse et al relates to an electronic ballast that is controlled by a microprocessor. With particular attention to FIG. 10, Crouse et al teach the use of an opto-coupler in series with each filament. As disclosed in column 7, lines 58-62, the LEDs in the opto-couplers are coupled to the microprocessor for turning on the filaments during start up and turning off the filaments during normal operation. In view of the above, Applicant respectfully submits that Crouse et al fails to teach or suggest the use of an opto-coupler whose output triggers disconnection of an operating device at the input of an AC voltage generator which feeds an AC voltage into a load circuit if input current of the optocoupler becomes negligibly small as defined by Claim 4. Dependent Claims 5 and 6, dependent on independent Claim 4 and thus on subject matter deemed patentable, is similarly viewed. Allowance thereof is also urged.

The remaining cited art has been examined, but is not considered more pertinent to patentability than the art discussed above.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

The Application with Claims 1-6 is deemed in condition for allowance and such action is respectfully urged. Should the Examiner believe that minor differences exist which, if overcome, would pass the Application to allowance and that said differences

can be discussed in a phone conversation, the Examiner is respectfully requested to phone the undersigned at the number provided below.

Respectfully submitted,

A handwritten signature in black ink, reading "Carlo S. Bessone". The signature is fluid and cursive, with the first name "Carlo" and last name "Bessone" clearly distinguishable.

Carlo S. Bessone  
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claim 1 has been amended as follows:

1. (AMENDED) An electronic operating device for operating one or more gas discharge lamps which contain filaments, the operating device having the following features:
- an AC voltage generator (G3) which feeds an AC voltage into a load circuit,
  - a load circuit which contains at least one lamp and is designed such that the phase of the current which flows in the load circuit is determined with reference to the applied AC voltage, essentially by at least one component which conducts a current which flows through the filaments, and
  - a device for measuring the phase of the current, which flows in the load **[current]** circuit, with reference to the applied AC voltage wherein the operating device is disconnected as soon as the above-named device for measuring the phase detects a phase angle which violates a prescribed limiting value.

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